IN THE CLAIMS:

1. (Currently amended) A liquid trap ~~(10), in particular~~ for collecting liquids or frozen particles in a vacuum device, comprising ~~with~~ a trap container ~~(11)~~, which has an inner space ~~(12)~~ and a inflow element ~~(13)~~, through which liquid can enter from an outer space ~~(20)~~ of the trap container ~~(11)~~ into the inner space ~~(12)~~ of the trap container ~~(11)~~, ~~characterized in that~~ wherein the inflow element ~~(13)~~ is formed by an inlet channel ~~(15)~~ in a wall ~~(14)~~ of the trap container ~~(11)~~, ~~wherein~~ and the inflow channel ~~(15)~~ has an inner diameter (D) with $D < 2$ mm and an inner length (L) with $L < 4$ mm.

2. (Currently amended) The liquid trap according to claim 1, in which the inlet element ~~(13)~~ has a conically shaped outer wall, which projects in a tapered manner from the wall ~~(14)~~ into the outer space.

3. (Currently amended) The liquid trap according to claim 2, in which the outer wall forms an angle of less than 70° relative to the wall ~~(14)~~ of the trap container ~~(11)~~.

4. (Currently amended) The liquid trap according to claim 2 ~~or 3~~, in which the outer wall forms an angle greater than 45° relative to the wall ~~(14)~~ of the trap container ~~(11)~~.

5. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which the diameter (D) is selected to be in the range of 1 µm to 1 mm.

6. (Currently amended) The liquid trap according to claim 1 ~~5~~, in which the diameter (D) is selected to be in the range of 5 µm to 100 µm.

7. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which the length (L) of the inlet channel ~~(15)~~ is less than two times the ~~doubled~~ diameter (D).

8. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which a heating device ~~(30)~~ is provided, with which the temperature of the inflow element ~~(13)~~ is temperable.

9. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which a first adjusting device ~~(40)~~ is provided, with which the diameter (D) of the inlet channel ~~(15)~~ can be adjusted.

10. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which a second adjustment device ~~(50)~~ is provided, with which the position of the liquid trap in the outer space is adjustable.

11. (Currently amended) The liquid trap according to ~~one of the preceding claims~~ claim 1, in which the inflow element ~~(13) represents~~ is an exchangeable component.

12. (Currently amended) A vacuum device ~~(60)~~ comprising : ~~with~~

a vacuum chamber ~~(61)~~,

a liquid source ~~(62)~~, with which liquid can be supplied into the vacuum chamber ~~(61)~~,

and

a liquid trap ~~(10, 63)~~ according to ~~one of the preceding claims~~ claim 1 ~~through 10~~.

13. (Currently amended) The vacuum device ~~(60)~~ according to claim 12, in which the liquid trap can be set as a module in a wall of the vacuum chamber.

14. (Currently amended) The vacuum device ~~(60)~~ according to claim 12 ~~13 or 14~~, which includes a plasma Röntgen source, a mass spectrometric analytical device, or a device for molecular distillation.

15. (Currently amended) The vacuum device ~~(60)~~ according to ~~one of claims~~ claim 12 ~~to 14~~, which has an adjustment device ~~(68)~~, with which the liquid source ~~(61)~~ and the liquid trap ~~(62)~~ can be aligned relative to one another.

16. (Currently amended) A method for collecting a liquid in drop-, jet-, or particle form with a predetermined radius (R) in a vacuum device ~~(60)~~ with a vacuum chamber ~~(61)~~ and a liquid trap ~~(10)~~, which has a trap container ~~(11)~~ with an inner space ~~(12)~~ and an inflow element ~~(13)~~, through which the liquid enters from the vacuum chamber ~~(61)~~ into the inner space ~~(12)~~ of the trap container ~~(11)~~ and vapor of the liquid flows from the trap container ~~(11)~~ into the outer space, comprising the steps of:

collecting a liquid ~~characterized in that liquids~~ with a radius (R) in the range of 1 µm to 100 µm and a vapor pressures in the range of 1 kPa to 100 kPa are collected, and

moving the liquid ~~is moved~~ through an inlet channel ~~(15)~~, which is formed by the inflow element ~~(13)~~ and having an inner diameter (D) with $D < 20R$ and an inner length (L) with $L < 2D$.

17. (Currently amended) The method according to claim 16, in which the flow of a gas atmosphere, which surrounds the liquid before collection, is reversed upon entry of the liquid into the inlet channel ~~(15)~~ by a conical outer shape of the inflow element ~~(13)~~.

18. (Currently amended) The method according to claim 16 ~~or 17~~, in which the inflow element ~~(13)~~ is heated at least at the beginning of the collection of the liquid.

19. (Currently amended) The method according to ~~one of the preceding claims~~ claim 16 ~~through 18~~, in which the liquid is collected in the liquid trap at ambient temperature.

20. (Currently amended) The method according to ~~one of the preceding claims~~ claim 16 ~~through 19~~, in which the liquid is collected after an irradiation for plasma-based production of Röntgen radiation or after separation from a substance to analyze in a mass-spectrometry analytical device.